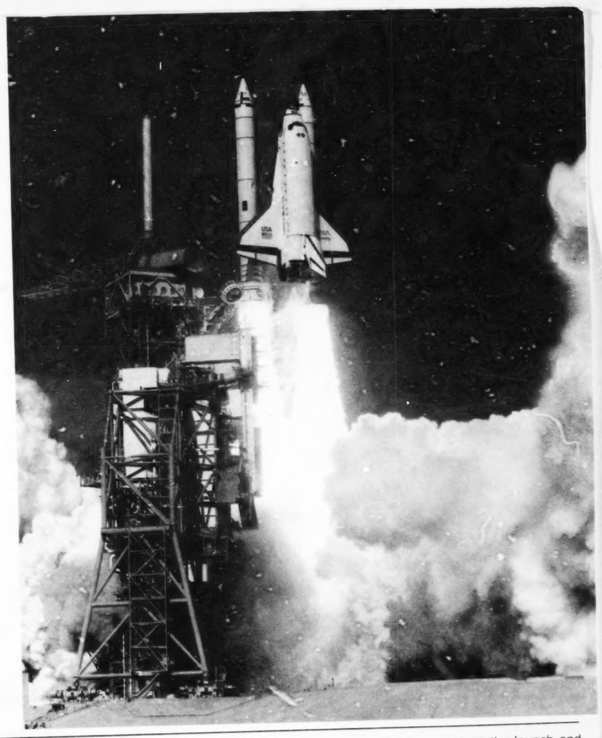
1990 SPACE LIFE SCIENCES TRAINING PROGRAM

A SUMMER PROGRAM at the JOHN F. KENNEDY SPACE CENTER KENNEDY SPACE CENTER, FLORIDA

Sponsored by the
National Aeronautics and Space Administration

Conducted by
NASA Kennedy Space Center
The Bionetics Corporation, and
Florida A&M University
College of Pharmacy
and Pharmaceutical Sciences
Tallahassee, Florida



THE SPACE LIFE SCIENCES TRAINING PROGRAM

The Space Life Sciences Training Program (SLSTP) is an investment in tomorrow. It is an intensive six-week training program at the Kennedy Space Center in Florida for college students interested in Life Sciences, Pre-medicine, Bioengineering or related fields. The program will allow students to participate in the conceptualization, preparation, pre- and postflight testing, data analysis, and report preparation phases of space flight experiments and NASA life sciences research.

The program is scheduled for mid-June through July, 1990. After the successful completion of the program, five semester hours of tuition free college credit will be offered to each student through Florida A&M University, which is also responsible for program promotion, student recruitment, selection, travel, housing, program evaluation, and academic consultation.

A limited number of positions are also available, yearly, for graduate students and university faculty as part of the program support staff.

PURPOSE:

The purpose of the SLSTP is to attract college students interested in research germane to the NASA field of Space Life Sciences. Participants will gain insight into how space life sciences flight experiments are conducted as well as explore future research opportunities in space life sciences.

After completion of this program and subsequent professional training, the end result should be a pool of talented research scientists employed in universities, industries, and NASA with practical experience in the flight of life sciences experiments in space.

CURRICULUM:

The six-week SLSTP curriculum will involve morning lectures by leading research scientists, managers, engineers, and astronauts from NASA Centers, distinguished universities, and industry. Tours of the KSC Shuttle and payload facilities will provide students firsthand knowledge of the processes involved between arrival of a life sciences flight experiment at KSC and final integration of that experiment into the Shuttle. In the afternoons, students will be actively involved in the planning and execution of experiments that span the range of Life Sciences research of current interest to NASA. These experiments have been chosen to provide the trainees with experience in as many aspects of flight experiment development as possible: from experiment conception and design to timeline development, protocol testing, and actual flight operations. In the possible absence of Shuttle flights during the scheduled six-week period, it is planned to conduct a ground-based flight simulation with reasonable fidelity. Evening and weekend activities will be scheduled to include informal discussions with visiting lecturers and astronauts and work on special projects. The curriculum will emphasize the unique features of experiments conducted in the spaceflight environment which include weightlessness, space limitations, and issues of compatability with other on-board experimental requirements.

Some of the potential flight experiments in which the students may become involved include plant studies, testing the effects of the space environment on the genetics and growth of small seedings; animal projects aimed at developing an on-demand feeding system for research animals to be flown on the Shuttle; and human studies of sensory conflict, muscle atrophy , and cardiovascular changes related to spaceflight.

Student participation activities will include the opportunity to participate in development and testing of operational protocols, performance of ground-based control experiments, direction, analysis and evaluation of postflight testing sessions, as well as participation in the implementation of actual Shuttle flight experiments, with opportunity for additional emphasis in at least one project.

HOW TO APPLY FOR TRAINEE POSITIONS:

Student enrollment in each year's SLSTP is limited to 30 to 40 undergraduate students currently enrolled in an accredited U.S. college or university:

- Who will have completed their freshmen, sophomore or junior year at the start of the program. Graduating seniors (those students who will complete their senior year prior the start of the program) are not eligible to apply. Applicants must be pursuing their first undergraduate degrees in Life Sciences, Pre-medicine, Bioengineering or a related field (students with Associate Degrees may apply). Other majors that are encompassed in the above categories include but are not limited to:

Animal Sciences	Electrical Engineering
Biochemistry	Geology
Biophysics	Mathematics
Biostatistics	Pharmacy
Chemistry	Physics
Computer Sciences	Plant Sciences
Ecology	Psychology

- Who are U.S. citizens.
- Who have a cumulative GPA of 3.0 or higher at the time of application.

Previous SLSTP participants are not eligible for a second student experience but are encouraged to apply for support staff positions.

Selection of SLSTP student participants will be on a nationally competitive basis.

The Space Life Sciences Training Program is an equal opportunity and equal access program. Minorities and Women are encouraged to apply.

Application materials for undergraduate student trainees may be requested from:

PROGRAM DIRECTOR
SPACE LIFE SCIENCES TRAINING PROGRAM
FLORIDA A&M UNIVERSITY
COLLEGE OF PHARMACY AND
PHARMACEUTICAL SCIENCES
106 HONOR HOUSE
TALLAHASSEE, FLORIDA 32307

The following application materials must be postmarked no later than January 31, 1990 and mailed to the above address:

- A completed SLSTP Application Form.
- A black and white glossy passport-type photo.
- An official transcript from every college attended up to and including Fall, 1989.
- A completed SLSTP control record card.
- A 500 word, typed (double spaced) essay which will be used to evaluate the applicant's scientific experience and written communication skills. The essay should relate to classroom, laboratory, and research interest and/or experiences in the sciences. The career goals of the applicant should also be concisely stated.
- Three (3) completed reference request forms provided with the application kit.
- Applications and other materials post-marked after January 31, 1990 will not be considered.
- Applicants will be notified of their acceptance/nonacceptance no later than March 31, 1990.

THE KENNEDY SPACE CENTER

As the lead Center within NASA for the development of launch procedures, technology and facilities, the Kennedy Space Center launches manned space vehicles, unmanned planetary spacecraft, and scientific, meteorological and communications satellites. The Center serves as the launch and landing site for the reusable Space Shuttle, which is opening a new era in space transportation.

The Kennedy Space Center's main mission encompasses planning and directing:

- assembly of space vehicles
- preflight preparation of space vehicles and their cargo
- test and checkout of launch vehicles, spacecraft and facilities
- coordination of tracking and data acquisition requirements
- countdown and launch operations
- landing operations and refurbishment for future missions.

In addition, the Kennedy Space Center plays an increasing role in the implementation of Life Sciences flight experimentation and ground-based space-related research. The Center is equipped with state of the art facilities and has an excellent resident staff of life scientists, engineers , and administrative personnel to support these efforts.

TRAINEE SUPPORT

Trainees will receive round trip transportation between their home and the Orlando International Airport in Florida. They will receive free accomodations in the Cocoa Beach area, and local transportation to and from the Kennedy Space Center. Trainees will also receive a daily meal allowance which should also cover other expenses.

FACULTY LEVEL PROJECT COUNSELORS

Four or five project counselor positions are open each year for persons who will assist trainees in understanding the scientific concepts to which they will be exposed and evaluate both trainees and the program. The project counselors will reside with the trainees, assist in curriculum development, implementation of the program activities, and act as focal points for trainees in need of guidance on laboratory projects, and written and oral reports. They will also be responsible for logistical operations involved in trainee housing and transportation to and from the Kennedy Space Center and other local sites. Project Counselors will receive free lodging, meals, and a competitive salary for their involvement.

Interested persons should submit a curriculum vitae and three letters of recommendation on or before December 31, 1989 to: Program Director, SLSTP at the address given under "How To Apply For Trainee Positions." Applicants will be notified of selection or nonselection by March 31, 1990.

GRADUATE STUDENT LEVEL ASSISTANTS

Graduate students or persons with graduate level experience willing to devote January through August to the development of the 1990 SLSTP and have the following qualifications are encouraged to apply for employment as Project and Curriculum Assistants through The Bionetics Corporations at the Kennedy Space Center. Applicants must be persons with teaching and/or research experience in human physiology, animal nutrition, microbiology, bioengineering, plant physiology, or other Life Sciences fields selected for each year's program. These project and curriculum assistants will be assigned major responsibility for the development and implementation of the laboratory activities.

The experience gained through the SLSTP has made former SLSTP project and curriculum assistants highly desirable candidates for positions with NASA, or with NASA funded university laboratories or contractors. Interested persons should send a letter of interest, resume and three letters of reference to: SLSTP Curriculum Coordinator, The Bionetics Corp., Mail Code BIO-1, Kennedy Space Center, FL 32899.

INTERESTED INDIVIDUALS SHOULD COMPLETE & RETURN CARDS BELOW:

SPACE LIFE SCIENCES TRAINING PROGRAM
(REQUEST FOR APPLICATION MATERIALS)

Application Deadline: January 31, 1990

Name _____ Telephone _____

Street Address _____

City, State, Zip _____

Academic
Classification: ____ Freshman ____ Sophomore ____ Junior ____ Senior

Institution: _____

_____

Major: _____

U.S. Citizenship Required